Moose Management Review

Listening Sessions

May 2019
Moose Management Review

Why are we here?

• The Ministry of Natural Resources and Forestry (MNRF) has made a number of changes in recent years to address concerns about moose populations.

• While the results of these changes are somewhat encouraging, with moose numbers in some areas improving, there continues to be management challenges.

• As tag numbers for adult moose have been reduced to address population concerns, hunters are increasingly raising concerns about lack of opportunities and fairness of the tag draw.

• In fall 2018 the Minister announced the intent to review moose quota setting and the tag draw and consider changes for 2020.

• Ontario’s Big Game Management Advisory Committee (BGMAC) has been tasked by the Minister with making recommendations – informed by what we hear during these sessions, on questionnaires and through other communications with hunters.
Session Format & Opportunities for Input

Session Format

• Open house.

• Information for review – same material presented on posters and slide show.

• Big Game Management Advisory Committee members and Ministry of Natural Resources and Forestry staff available for questions and discussion.

Opportunities for Input

• Share your thoughts and concerns with BGMAC and MNRF hosts.

• Complete the paper questionnaire and leave with BGMAC or MNRF hosts.

• Complete the online questionnaire at ontario.ca/moosereview.

• Any proposed changes that result from this effort will be posted for consultation at a later date, allowing further opportunity for input.
Presentation Outline

   *Slides 5-14*

   *Slides 15-35*

2. Improving Quota Setting.  
   *Slides 36-49*

3. Potential Changes to Hunting Rules to Increase Hunting Opportunities for Adult Moose.  
   *Slides 50-62*

   *Slides 63-88*
Moose Management in Ontario – History & Current Approach
A Brief History of Moose Management in Ontario

- **Pre-late 1800’s**
  - Unregulated & subsistence harvest, land clearing, settlement

- **1888-1895**
  - Moose season closed due to over-hunting

- **1940’s**
  - Concern regarding apparent declining populations
  - Moose season closed across Ontario

- **1949**
  - Gradual re-introduction and liberalization of moose hunting

- **1950’s**
  - Moose management goals to provide:
    - A moose population as large as can be reconciled with timber production & forest management
    - As much hunting and viewing as the population will sustain

Moose Populations declined by 1/3 between 1960 and 1980 – including a drop of 45,000 between 1968 and 1974 while harvest continued to reach over 13,000 animals each fall
A Brief History of Moose Management in Ontario

1970 - 1980
- Apparent crisis in moose populations, limited tools to address moose harvest
  - Reduced Seasons
  - Post-rut seasons
- WMUs established

1980
- First provincial review of moose program and development of Moose Management Policy
  - Two hunters per moose, shorter seasons – but harvest still too high

1980 - 1982
- Selective harvest system instituted province-wide
  - Party hunting legalized
  - Calf harvest controlled in 4 eastern Ontario WMUs

1983
- Moose Program Review; implementation of new policies and guidelines in 2009

1988

2004

2008

2014-2017
- Moose Project – season changes to address concerns about populations, develop new population objectives
Key Aspects of Moose Management in Ontario

• Landscape-scale and ecologically-based population management

• Harvest management

• Habitat management

• Research, moose aerial inventories, hunter reporting, socio-economic surveys

• Engagement, sharing of information
Moose Management Policy Framework

Cervid Ecological Framework
Strategic policy on how moose, deer, elk and caribou will be managed in relation to each other in Ontario.

Moose Management Policy
Provincial policy for moose management – contains goals, objectives and strategies to ensure sustainable populations and a mix of benefits.

Population Objective Setting Guidelines
Provides the process and considerations for determining how many moose are expected and desired in an area.

Harvest Management Guidelines
Outlines the tools available to management moose harvest and describes the general process for determining how many moose can be harvested in a particular area.
Landscape-Based Management – Cervid Ecological Framework

Cervid Ecological Zone A
- Woodland caribou, low densities of moose and white-tailed deer
- Moose objective: maintain low densities

Cervid Ecological Zone B
- Moose, white-tailed deer and woodland caribou
- Moose objective: maintain low to moderate densities

Cervid Ecological Zones C1 and C2
- Moose, white-tailed deer, with small numbers of elk and caribou
- Moose objective: maintain a moderate to high density population

Cervid Ecological Zones D1 and D2
- Moose, white-tailed deer and elk
- Moose objective: maintain a moderate to high density population

Cervid Ecological Zones E1, E2, and E3
- White-tailed deer with small numbers of moose and elk
- Moose objective: maintain low population densities in some parts of the zone
Moose Hunting / Harvest Management

Provincially licenced moose harvest is managed using the following tools:

1. Selective Harvest – different quotas developed for bulls, cows and in some cases calves

2. Season Timing & Length – varies by area and age of moose based on different pressures and to achieve different objectives

3. Area Management – WMU specific quotas and regulations

4. Firearm Type – bow, rifle/shotgun, muzzleloader seasons

5. Hunter Management – party hunting, special opportunity hunts

6. Communication, Education – e.g. previous quota and applicant information provided in HRS that may influence where hunters apply to draw
Current Selective Harvest Approach

- Selective harvest is the system allowing different harvest quotas for different gender and age components of the moose population.

- The current approach focuses hunting pressure on calves (i.e. unrestricted harvest), moderate pressure on bulls and least pressure on cows.

- The current approach assumes hunter harvest of calves is not likely to negatively impact moose populations.

- However, recent science indicates hunter harvest of moose calves has a much greater potential to impact moose populations.
General Moose Tag Quota Setting Process

Moose Aerial Inventory (current estimate & trends)

Hunter Reporting Data (latest results & trends)

Other Mortality Information (e.g. illegal harvest, natural mortality)

Consider Status of Population Relative to Objective

Set % Harvest Level (percent of huntable population)

Rights-based Harvest (considered directly or indirectly)

Plan Allowable Moose Harvest (bulls, cows, calves)

Apply Tag Filling Rates (bull, cow, firearm type – from previous year(s) data)

Tag Numbers (Quota) (by sex, age, firearm type)

- Planned harvest of bulls, cows and calves is based on the current selective harvest approach.
- Because calf harvest is not controlled in most areas the level of calf harvest (based on reported harvest in recent years) must be accounted for first. The remaining allowable harvest can be planned between bulls and cows.

• Tag fill rates affect the number of tags that can be allocated to hunters.
  • For example, at an allowable harvest of 100 bulls:
    o Tag fill rate of 50% results in 200 tags available (100/0.50)
    o Tag fill rate of 40% results in 250 tags available (100/0.40)
Moose Tag Draw / Allocation System

Step 1
Guaranteed Group Size Allocation
- Each group that meets the Guaranteed Group Size is allocated one tag for the WMU, type of moose and season.
- The tag is assigned to the longest unsuccessful group member.
- All members of these “guaranteed groups” are then removed from the draw.
- Guaranteed group size varies between WMUs, and according to type of moose or firearm.

Step 2
Large Group Allocation
- The number of applicants left in the draw after Step 1 is compared to the number of tags still available. This is the Hunter-to-Tag ratio.
- Each group whose number of Pool 1 applicants is equal to, or greater than, the Hunter-to-Tag Ratio is issued one tag.
- The tag is assigned to the longest unsuccessful group member and all members of the group are removed from the draw.

As tag numbers have been reduced, the hunter:tag ratio has gotten very high and Steps 1 and 2 are sometimes skipped to avoid distributing more tags and harvesting more moose than the population can sustain.

Step 3
Random Draw
- All Remaining Pool 1 applicants (all individuals and every member of the remaining groups) are then considered in the random draw.
- If a tag is given to a member of a group at this step, the rest of the group is removed from the draw.
- In most WMUs only hunters in Pool 1, Choice 1 will have a chance to receive a tag.

Step 4
Northern Resident Draw
- In northern WMUs (1-42), 5% of the adult tag quota is set aside for northern residents who were unsuccessful (or a member of an unsuccessful group) in the current year’s draw or the previous two draws.
Moose Population & Hunting Trends
The selective harvest system was implemented in the early 1980’s at a provincial population of 80,000 moose.
CEZ A Population Trend

Estimated Number of Moose

0 5000 10000 15000 20000 25000 30000

Upper Moose Population Objective

Lower Moose Population Objective

Year:

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CEZ B Population Trend

Estimated Number of Moose

Upper Moose Population Objective

Lower Moose Population Objective

Map showing CEZ B region with various zones marked.
CEZ C1 Population Trend

Estimated Number of Moose

Upper Moose Population Objective

Lower Moose Population Objective

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CEZ D₁ Population Trend

Estimated Number of Moose

Upper Moose Population Objective
Lower Moose Population Objective
CEZ D₂ Population Trend

Estimated Number of Moose

Upper Moose Population Objective

Lower Moose Population Objective

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2019 Moose Population Status Relative to 2030 Population Objectives

- Population above objective range
- Population within objective range
- Population below objective range
## Number of Hunters vs. Estimated Moose Populations (2014)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Quebec</td>
<td>176,710</td>
<td>125,000</td>
<td>0.71</td>
</tr>
<tr>
<td>Ontario</td>
<td>106,752</td>
<td>92,300</td>
<td>0.86</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>12,931</td>
<td>48,045</td>
<td>3.71</td>
</tr>
<tr>
<td>Newfoundland and Labrador</td>
<td>26,770</td>
<td>114,000</td>
<td>4.26</td>
</tr>
<tr>
<td>British Columbia</td>
<td>31,188</td>
<td>162,500</td>
<td>5.21</td>
</tr>
<tr>
<td>Alberta</td>
<td>21,560</td>
<td>115,000</td>
<td>5.33</td>
</tr>
<tr>
<td>Alaska</td>
<td>31,607</td>
<td>175,000 – 200,000</td>
<td>5.94</td>
</tr>
<tr>
<td>Vermont</td>
<td>342</td>
<td>2,200</td>
<td>6.43</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>4,626</td>
<td>32,000</td>
<td>6.91</td>
</tr>
<tr>
<td>Manitoba</td>
<td>3,252</td>
<td>27,000</td>
<td>8.3</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>346</td>
<td>5,000</td>
<td>14.5</td>
</tr>
<tr>
<td>Maine</td>
<td>3,095</td>
<td>60,000</td>
<td>19.39</td>
</tr>
<tr>
<td>Yukon Territory</td>
<td>2,793</td>
<td>70,000</td>
<td>25.06</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>127</td>
<td>3,800</td>
<td>29.9</td>
</tr>
</tbody>
</table>

*(Timmermann and Rodgers- Status of Moose in NA Circa 2015)*
Why Has Ontario’s Moose Population Declined?

• Many factors affect moose populations.

• The influence of each factor varies between areas and over time, and the effects of most are difficult or impossible to monitor across large areas.

• Some factors like climate, deer populations and parasites interact and their negative affects may be increasing.

• Changes in habitat are strongly influenced by forest management which is affected by external economic factors (i.e. demand for wood products).

• Observed declines are most likely being caused by the cumulative effects of small changes in several factors.

• Significant concerns about calf survival and recruitment specifically.

• Provincially licensed moose harvest is the factor MNRF has the greatest ability to control directly to influence population growth.
Sales of Moose Licences

- Resident Licences
- Total Licences

Graph showing the sales of moose licences from 2000 to 2018.
Resident Moose Tag Quotas 1995-2018
Adult Moose Tags Issued to Residents in 2018

- WMUs shaded yellow and green had the greatest number of resident adult tags issued in 2018.
- Unshaded WMUs had no adult tag quota.
Tourist Industry Tags 2018

- There is no Non-resident moose hunting season in WMUs 46-65. Unshaded WMUs had no tags issued.
- The map on the left shows higher numbers of tourist industry tags issued in WMUs shaded yellow and green.
- The map on the right shows higher percentages of tourist industry tags are issued to residents in WMUs shaded yellow, orange and red.
WMUs shaded orange and red had very high numbers of Pool 1, Choice 1 applicants for adult tags in 2018.

Unshaded WMUs had no adult tag quota.
WMUs shaded orange and red had a very high number of Pool 1, Choice 1 applicants for each adult tag in 2018. Unshaded WMUs had no adult tag quota.
WMUs shaded orange and red had very high numbers of moose hunters in 2018.
This is based on information provided by moose hunters on up to three WMUs they hunted in.
This is based on preliminary analysis of 2018 hunter reporting results.
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2018 Resident & Tourist Industry Moose Hunter Days (preliminary results)

- WMUs shaded orange and red had very high levels of moose hunter effort in 2018.
- This is based on information provided by moose hunters on up to three WMUs they hunted in.
- Some southern Ontario WMUs have very high hunter effort despite their relatively small size and short season.
- This is based on preliminary analysis of 2018 hunter reporting results.
Moose harvest levels have been declining since before the population peak in 2004 and recent changes to tag numbers and hunting seasons to address population concerns.
WMUs shaded orange and red had the highest levels of estimated moose harvest in 2018. This is based on preliminary analysis of 2018 hunter reporting results.
Improving Quota Setting
Improving Quota Setting (Changes to Selective Harvest)

What are the concerns / challenges?

• Results from recent scientific studies indicate that hunter harvest of calf moose can negatively impact moose populations more than was once thought.

• Moose aerial surveys in recent years have shown low calf numbers in many areas.

• The shortened 2-week calf season that was implemented in 2015 was initially successful at reducing calf harvest to planned levels but calf harvest has returned to previous levels in some areas and is increasing.

• Because there are currently no controls on calf harvest, MNRF must first consider recent calf harvest levels when planning allowable harvest. High calf harvest levels in an area therefore reduces the number of adult moose hunting opportunities.

• Hunters have expressed a strong preference for adult moose hunting opportunities.

• Changes to the current selective harvest approach and quota setting could result in additional adult moose hunting opportunities while providing additional tools to ensure sustainable management of moose populations.
Three Key Things Research Informs us About Harvest of Moose Calves in Ontario

1. Calf harvest is largely additive to other mortality factors. This means calf harvest by hunters adds to other forms of calf mortality, leading to higher overall calf mortality rates and potential for greater impact on moose populations.

2. Calf harvest can increase the impact of wolf predation by shifting predation pressure from calves to adults.

3. Restricting calf harvest increases calf recruitment & moose population growth rate.

MNRF has conducted significant research on moose to inform management. This includes intensives studies to investigate calf mortality.
The two-week calf hunting season initially had the intended effect of reducing calf harvest significantly. Calf harvest numbers have since returned to higher levels in some areas.
Calf Recruitment to First Winter

- Based on most the recent Moose Aerial Inventory in each WMU.
- 30 calves / 100 cows is the threshold considered necessary to maintain a population.
- Numbered WMUs that aren’t shaded have moose hunting seasons but have not been surveyed in recent years.
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Percent of Estimated Resident Harvest that was Calves in 2018

- WMUs shaded yellow, orange, or red had a very high % harvest of calves based on a preliminary analysis of 2018 hunter reporting results.
- WMUs that aren’t shaded had zero estimated resident harvest in 2018.
- Generally a % harvest of calves above 20% reduces adult harvest opportunity.
- A high % harvest of calves also limits population growth.
- Larger populations can sustain more adult and calf harvest.
Lessons Learned in Existing Calf Control WMUs

- Calf harvest restrictions were implemented in WMUs 48, 55A, 55B and 57 in eastern Ontario in 2004.

- Hunters were required to apply for and be issued a WMU-specific calf tag in the draw in order to hunt calves in these areas (party hunting was still allowed on any valid tag).

MNRF scientists investigated the effect of the calf harvest restrictions on calf:cow ratios and population growth rates by comparing the four calf harvest control WMUs (dark shading) to five nearby control WMUs (light grey) where no restrictions were put in place.
Restricting calf tags improved calf recruitment. Following the implementation of restricted calf harvest in 2004, calf : cow ratios stabilized or declined slightly in most treatment WMUs, but during this same time period they declined markedly in areas where calf tags were unrestricted.
Calf Tag Controls – Effects on Population Growth Rate

During the 10 year period following implementation of the calf tags, the growth rate of moose populations in WMUs with restricted calf harvest stabilized or increased slightly, whereas it declined sharply in the control WMUs where calf tags remained unrestricted.
Calf Tag Controls – Effects on Moose Numbers

Calf tag controls were introduced in four WMUs in 2004. From 2003-2019:
• The moose population increased from 883 to 1959 (+122%).
• Adult Tag Quotas increased from 15 to 241.
• Calf Tag Quotas increased from 58 to 280.
Most moose hunters strongly prefer to hunt bull moose (blue) and adult moose (red).
3 scenarios presented to illustrate potential trade-offs

- **Scenario 1**: WMU with moderate level of allowable harvest (40 moose) and high percent harvest of calves (95%) in current system.

- **Scenario 2**: WMU with moderate to high level of allowable harvest (90 moose) and moderate levels of percent calf harvest (50%) in current system.

- **Scenario 3**: WMU with low level of allowable harvest (15 moose) and moderate to low percent calves (27%) in current system.
### Effects of Calf Harvest Controls on Hunting Opportunities for Adult Moose

<table>
<thead>
<tr>
<th></th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Calf Quota</td>
<td>Calf Quota</td>
<td>No Calf Quota</td>
</tr>
<tr>
<td><strong>Allowable Harvest</strong></td>
<td>40</td>
<td>40</td>
<td>90</td>
</tr>
<tr>
<td>(Population Size * % Harvest)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>% Calf Harvest</strong></td>
<td>95%</td>
<td>20%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Planned Calf Harvest</strong></td>
<td>38</td>
<td>8</td>
<td>45</td>
</tr>
<tr>
<td><strong>Planned Adult Harvest</strong></td>
<td>2</td>
<td>32</td>
<td>45</td>
</tr>
<tr>
<td><strong>Tag Fill Rate</strong></td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td><strong>Calf Tags Issued or Quota</strong></td>
<td>1500</td>
<td>16</td>
<td>1200</td>
</tr>
<tr>
<td>(Licences Sold or Calf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harvest/Tag Fill Rate)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adult Tag Quota</strong></td>
<td>4</td>
<td>64</td>
<td>90</td>
</tr>
<tr>
<td>(Adult Harvest/Tag Fill Rate)</td>
<td></td>
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</tbody>
</table>

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Improving Quota Setting

Summary

• Changes to selective harvest and quota setting to restrict calf harvest would require hunters to apply for and be issued WMU specific calf tags.

• Controlling calf harvest through tag quotas issued through a draw has the potential to create additional adult moose hunting opportunities, particularly in WMUs with moderate to high allowable harvest levels where current uncontrolled calf harvest is high.

• Hunters who were unsuccessful in the draw could be allowed to purchase a moose hunting licence without a tag that would still allow them to hunt in a party.

• Controlling calf harvest through tags would allow for the elimination of the two-week calf hunting season – so calves could be hunted once again throughout any open moose hunting season, including bows-only seasons.
Potential Changes to Hunting Rules to Increase Hunting Opportunities for Adult Moose
Potential Changes to Hunting Rules to Increase Hunting Opportunities for Adult Moose

What are the concerns / challenges?

• Ontario has less restrictive hunting rules compared to many other jurisdictions. This includes long seasons, unlimited calf harvest and few restrictions on party hunting.

• These rules, combined with improvements in hunting equipment and improved ability to access moose hunting areas have resulted in generally high levels of hunter success at filling tags across much of moose range – even when moose populations are low.

• As success at filling tags increases, the number of tags available to hunters decreases.

• MNRF could consider some changes to hunting rules to make it more challenging for hunters and hunting parties to harvest moose and thereby allow additional moose hunting opportunities without increasing the overall harvest of moose.

• Declines in moose populations are one factor leading to reduced adult moose hunting opportunities. Growth of moose populations in many areas consistent with population objectives will also help increase moose hunting opportunities.
Resident Tag Fill Rates Across Moose Range

CEZ C2
- Bull Gun 1997-2018, 0.40 to 0.55, +38%
- Cow Gun 1997-2018, 0.39 to 0.39, +0%

Tag fill rate = moose harvested per tag issued.

CEZ D2
- Bull Gun 1997-2018, 0.34 to 0.45, +32%
- Cow Gun 1997-2018, 0.53 to 0.43, -19%
Resident Tag Fill Rates Across Moose Range

CEZ C1
- Bull Gun 1997-2018, 0.40 to 0.61, +52%
- Cow Gun 1997-2018, 0.51 to 0.51, +0%

CEZ D1
- Bull Gun 1997-2018, 0.34 to 0.44, +31%
- Cow Gun 1997-2018, 0.39 to 0.38, -3%

Tag fill rate = moose harvested per tag issued.
Resident Tag Fill Rates Across Moose Range

CEZ A
- Bull Gun 1997-2018, 0.22 to 0.24, +10%
- Cow Gun 1997-2018, 0.26 to 0.14, -45%

CEZ B
- Bull Gun 1997-2018, 0.38 to 0.36, -4%
- Cow Gun 1997-2018, 0.40 to 0.34, -17%

Tag fill rate = moose harvested per tag issued.
Resident Moose Hunting Season Length in Ontario

- WMUs shaded orange or red have relatively short seasons.
- Bows can be used in all firearm seasons.

Muzzle-loader and bow seasons are shown in WMUs 7A (65 days) and 18B (21 days).
## Comparison of Party Hunting Rules

<table>
<thead>
<tr>
<th>Province or State</th>
<th>Party Hunting Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario</td>
<td>Apply in groups up to 15. No limit on number of hunters that can hunt together.</td>
</tr>
<tr>
<td>Quebec</td>
<td>Single groups (one moose bag limit) can be 2-4 people.</td>
</tr>
<tr>
<td></td>
<td>Double groups (2 moose bag limit) can be 4-8 people. (wildlife reserve only).</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>Groups of 2 (successful applicant and designated hunter). A licence is void after</td>
</tr>
<tr>
<td></td>
<td>the tag is filled.</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>Max group of 5 (successful applicant plus up to 4 designated companion hunters).</td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>Under party licence. Only names listed on the licence can hunt under the licence.</td>
</tr>
<tr>
<td>Alberta</td>
<td>Groups of 2. Primary holder plus designated partner.</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>May apply in a group of up to 4 and hunt together under one tag if successful in</td>
</tr>
<tr>
<td></td>
<td>the draw. May also hunt as a group during regular season if each hunter has a licence.</td>
</tr>
<tr>
<td>Manitoba</td>
<td>Parties of 2 allowed. Exception is the conservation moose licence holders party of</td>
</tr>
<tr>
<td></td>
<td>4. Party hunters sign the backside of each others licences.</td>
</tr>
<tr>
<td>Maine</td>
<td>Permittee may select a sub-permittee to hunt with them (party of 2).</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Permittee may select a sub-permittee to hunt with them (party of 2).</td>
</tr>
</tbody>
</table>

Party hunting is restricted in different ways in different jurisdictions – either through party hunting specific regulations, or by group application and licensing requirements.
As tags become more scarce, Ontario hunters appear to become more skilled or persistent at harvesting adult moose.

L. M. Hunt. 2013. Wildlife Research http://dx.doi.org/10.1071/WR12185
As tags become more scarce, Ontario hunters appear to become more skilled or persistent at harvesting adult moose.
Wildlife Management Units 27, 28, 30, 31, 32, 33, 35, 36, 37, 39, 40, 41 and 42 have bows-only seasons but combined gun and bow quotas.
## Options to Reduce Tag Fill Rates

<table>
<thead>
<tr>
<th>Concern</th>
<th>Options to Address Concern</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal party hunting rules contribute to high tag fill rates.</td>
<td>1. Restrict party size.</td>
<td>• Prevents coordinated hunting among very large groups or multiple smaller groups.</td>
</tr>
<tr>
<td></td>
<td>2. Require hunters to document the other hunters in their party.</td>
<td>• Eliminates party tag filling.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Addresses concerns from some hunters about interference by large hunting parties.</td>
</tr>
<tr>
<td>Bows-only tag fill rates are lower than gun but some WMUs don’t have bows-only quotas and seasons.</td>
<td>1. Create bows-only seasons and tag quotas in areas that don’t currently have them.</td>
<td>• Would require conversion of some gun/firearm opportunities to bow unless population is increasing or combined with calf harvest restrictions that create additional adult opportunities.</td>
</tr>
<tr>
<td>Hunter access to forest roads and areas of recent forest harvest result in higher hunter success and predator foraging efficiency.</td>
<td>1. Restrict vehicular access by hunters in some areas.</td>
<td>• Option 2 is the more effective strategy to reduce hunter harvest and predation rates but also more costly.</td>
</tr>
<tr>
<td></td>
<td>2. Mechanically remove some forest roads after forestry operations have ended.</td>
<td></td>
</tr>
<tr>
<td>Prevalence of ATV use by moose hunters increases tag fill rates.</td>
<td>1. Restrict ATV use to retrieval of harvested moose.</td>
<td>• A restriction used in some other jurisdictions to reduce harvest rates.</td>
</tr>
</tbody>
</table>

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Figure shows adult tag quotas relative to various levels of calf harvest and tag fill rates.

- The adult tag quota is higher when the % harvest calves is lower, but also when adult tag fill rates are lower.
- When calf harvest is uncontrolled the percent of planned harvest that is calves can exceed 50% in a number of WMUs. Tag fill rates in Ontario, particularly for bulls, often approach or exceed 50%.
Summary

• Adult tag quotas can be increased by growing the moose population in accordance with population objectives.

• Adult tag quotas can be increased by decreasing the percent harvest of calves through changes in quota setting.

• Adult tag quotas can be increased by decreasing adult tag fill rates through changes to hunting rules and/or reducing moose hunter access to make it more challenging for hunters to harvest a moose.

• The largest increases to adult quotas is likely to result from decreasing both the percent harvest of calves and adult tag fill rates.
Making the Draw Simpler and Fairer
Making the Draw Simpler and Fairer

What are the concerns / challenges?

• Hunters for many years have expressed concerns about the complexity and lack of fairness with the tag draw / allocation approach. The concerns have increased with declines in tag numbers.

• The allocation approach has been reviewed several times since it was first implemented in 1983 but each time most hunters were reluctant to consider significant changes.

• MNRF’s ability to address the fairness of the draw depends on what hunters consider fair.

• Ontario’s current tag allocation approach is a system designed to work best when there are many more tags relative to hunter numbers and all four steps in the process can be completed.

• With lower tag numbers in recent years group steps are increasingly being skipped and hunters are being treated as individuals whether they apply in groups or not.
Step 1
Guaranteed Group Size Allocation
- Each group that meets the Guaranteed Group Size is allocated one tag for the WMU, type of moose and season.
- The tag is assigned to the longest unsuccessful group member.
- All members of these “guaranteed groups” are then removed from the draw.
- Guaranteed group size varies between WMUs, and according to type of moose or firearm.

Step 2
Large Group Allocation
- The number of applicants left in the draw after Step 1 is compared to the number of tags still available. This is the Hunter-to-Tag ratio.
- Each group whose number of Pool 1 applicants is equal to, or greater than, the Hunter-to-Tag Ratio is issued one tag.
- The tag is assigned to the longest unsuccessful group member and all members of the group are removed from the draw.

Step 3
Random Draw
- All Remaining Pool 1 applicants (all individuals and every member of the remaining groups) are then considered in the random draw.
- If a tag is given to a member of a group at this step, the rest of the group is removed from the draw.
- In most WMUs only hunters in Pool 1, Choice 1 will have a chance to receive a tag.

Step 4
Northern Resident Draw
- In northern WMUs (1-42), 5% of the adult tag quota is set aside for northern residents who were unsuccessful (or a member of an unsuccessful group) in the current year’s draw or the previous two draws.

As tag numbers have been reduced, Step 1 (Guaranteed Group Size Allocation) and Step 2 (Large Group Allocation) are sometimes skipped to avoid distributing more tags and harvesting more moose than the population can sustain.
WMUs shaded yellow or green had relatively high numbers of resident adult tags issued in 2018.
The Guaranteed Group Size (GGS) is based on the expected number of Pool 1, Choice 1 (P1C1) Applicants relative to the quota.

GGS is not applicable if the calculated number is greater than 15 (max group size) or if demand is less than quota.

The final GGS decision made to avoid risk of overharvest.

Guaranteed group size has generally increased in the last 11 years, but those trends aren’t true for all tag types, in part because there are fewer WMUs with a GGS now compared to 10 years ago.
Large Group Size Trends

- LGS = remaining P1C1 applicants remaining tags
- LGS not applicable if >15 (max group size) or if demand < quota.

The average large group size (Step 2 in the draw) has also generally increased, but like the GGS there are fewer WMUs with an LGS step.
A lower percentage of tags is being issued to guaranteed groups in recent years – because that step in the allocation process isn’t being run in as many WMUs.

A similar percentage of tags is being issued to large groups in step 2 of the process, even though this step is not being included as often in recent years.
More bull tags are being issued in the random draw step in recent years, but similar numbers of cow gun tags and fewer cow bow tags.
Regular Draw Trends

The average size of groups has increased over time, particularly for bow, bull tags.

The number of moose hunters applying as individuals is high and has increased for bull tags.
WMUs shaded yellow, orange and red have very high numbers of applicants for each bull and cow gun tag.
Applicants per Bow Tag

There are generally fewer applicants for each bull and cow bow tag but there are still some WMUs (yellow and orange shaded) with 11 or more applicants for each bull, bow tag.
A significant number of hunters in WMUs in southern, central and northeast Ontario have gone 10 or more consecutive years without receiving a tag.

A small percentage of hunters, primarily in southern, central and northeast Ontario, have gone over 20 consecutive years without receiving a tag.
## Big Game Management Advisory Committee

### Resident Draw Approach Summary Table

<table>
<thead>
<tr>
<th>Jurisdiction (Province or State)</th>
<th>Draw Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario</td>
<td>Success-weighted Random draw (priority pools(2)), Guaranteed Group Allocation, Large Group Allocation, Northern Resident Draw</td>
</tr>
<tr>
<td>Quebec</td>
<td>Random Draw x2 (adult female moose draw, wildlife reserve draw), plus over the counter licences for general moose licence (areas outside of wildlife reserves, bull/calf only)</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>Success-weighted Random draw (priority pools (5), every 5 years you move up a pool and your ballots/chances triple)</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>Random Draw</td>
</tr>
<tr>
<td>Newfoundland and Labrador</td>
<td>Success-weighted Random Draw (priority pools (9), runs twice for each pool, starts with pool 1 applications with co-applicants then pool 1 individual applicants, then same for pool 2 and so on)</td>
</tr>
<tr>
<td>British Columbia</td>
<td>Success-weighted Random Draw (successful applicants odds reduced by 66% for 3yrs), General Open Seasons (no draw) opportunities also exist</td>
</tr>
<tr>
<td>Alberta</td>
<td>Success-weighted Random Draw (priority increase with each year unsuccessful, 1yr=priority 1, 2yrs=priority 2, 3yr-priority 3, etc.)</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>Success-weighted Random Draw (priority pools (6), draw runs for each pool)</td>
</tr>
<tr>
<td>Yukon Territory</td>
<td>Success-weighted Random Draw (some areas, other areas = no draw). # of times applied and unsuccessful multiplied by itself 7 times = entries/chances in the draw.</td>
</tr>
<tr>
<td>Maine</td>
<td>Success-weighted Random Draw (bonus points (extra chances in draw) for consecutive years applied and unsuccessful)</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Success-weighted Random Draw (bonus points (extra chances in draw) for consecutive years applied and unsuccessful)</td>
</tr>
<tr>
<td>Vermont</td>
<td>No draw (2018), only 13 Bull permits divided among special priority-veterans, special opportunity recipients and the auction</td>
</tr>
</tbody>
</table>
Making the Draw Fairer & Simpler

Simpler

- Hunters have previously complained about draw complexity – particularly when the group application approach was introduced in 1992.
- More recently they haven’t complained about complexity but questions and criticism indicate many still don’t understand how the draw works, or how to apply to give themselves the best chances of success.
- There are benefits to developing and running a simplified draw system.

Fairer

- Defining “fair”.
- Awarding preferred (i.e. bull or adult) tags to hunters more frequently is difficult to achieve without other changes discussed previously or population growth.
- Favouring hunters who have gone many years without a tag or treating all hunters equally in the draw may be considered fair by some.
- Providing greater certainty to hunters on their chances or how long they may have to wait for a tag are also possible, along with considering a more cost-effective approach to maintain/build preference status.
Breaking Down Ontario’s Moose Tag Allocation Approach

Components of the tag allocation process:

• Application
• Group
• Preference
• Licence / tag prices
• Tag transfers
• Surplus tag distribution

The selective harvest approach and draw components are intricately linked. The preferred approach for one component influences potential options for others.
### Applying to the Draw

<table>
<thead>
<tr>
<th>Concern</th>
<th>Options to Address Concern</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| • Hunters are increasingly expressing frustration about having to pay for a licence to enter the draw. | 1. Allow hunters to apply to the draw with just an application fee. Fee could be similar to elk application fee ($15-$25) with cost influencing, and being influenced by other options. | • Addresses the concern from hunters that they must pay full price for a licence to enter the draw.  
• Application fee approach has been shown to inflate draw entries. May require further restrictions on tag transfers to ensure fairness. |
| • If calf tag controls are implemented across the province, hunters who do not receive a tag in the draw won’t be able to hunt moose (because there is currently no opportunity to purchase a moose hunting licence without a tag). | 2. If calf tag controls are implemented across the province, create a moose hunting licence that comes without a tag. This licence could potentially cost less than one that comes with a tag. | • Provides the opportunity for a moose hunter to hunt in a party even if they don’t receive a tag in the draw.  
• May result in the need for more restrictive party hunting rules.  
• Has significant revenue implications. Requires consideration of tag prices. |
## Group Application Approach

<table>
<thead>
<tr>
<th>Concern</th>
<th>Options to Address Concern</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hunters continue to express concerns about the complexity of the draw and uncertainty on how to apply to have the best chance at draw success.</td>
<td>1. Eliminate group steps and treat all hunters as equal in any draw approach. Hunters could still apply in a group to maintain the ability to transfer a tag, and to ensure most group members maintain their preferred status if the group only wants one tag.</td>
<td>• The original group allocation, similar to step 2 in the current process, was intended to benefit individuals in the random draw by removing entire groups of hunters when one draws a tag.</td>
</tr>
<tr>
<td>• Some individual applicants express concerns about the current allocation process favouring groups.</td>
<td>2. Restricting group size could lead to distribution of tags to more groups but in some circumstances may also result in fewer tags remaining for individuals in the random draw.</td>
<td>• Eliminating both group steps simplifies the draw approach for hunters but by itself does not address concerns about some hunters going many years without a tag.</td>
</tr>
<tr>
<td>• With recent tag reductions hunters are increasingly being treated as individuals in the draw whether they apply as part of a group or not.</td>
<td></td>
<td>• Group applications can be combined with other forms of preference – e.g. pooling of points or chances in the draw by groups.</td>
</tr>
<tr>
<td>• When included, the guaranteed group step has the potential to result in overallocation of tags.</td>
<td></td>
<td>• Eliminating group steps in the current approach also reduces the cost and time to build, maintain and run the draw.</td>
</tr>
</tbody>
</table>

*Big Game Management Advisory Committee*
### Preference – Pooling & Northern Resident Draw

<table>
<thead>
<tr>
<th>Concern</th>
<th>Options to Address Concern</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| • Hunters have for many years expressed concerns about fairness of the draw. These concerns have increased as tag numbers have been reduced. | 1. Consider alternative draw approaches that could better address hunter preference based on a hunter’s draw history. Options could include:  
  • Point system  
  • Success-weighted draw  
  • Revised pooling approach | • Alternative draw approaches are outlined on the next slide.  
• Many of the options discussed previously (e.g. calf tag quotas, application fee approach, group applications) can be combined with alternative draw approaches. |
| • The 2 pool approach with one year in pool 2 no longer helps ensure a hunter doesn’t go many years without a tag. | 2. Northern resident preference could be eliminated, or northern residents could be provided preference in alternative ways with a different draw system (e.g. bonus points, bonus chances). | • Should MNRF continue to provide some preference to northern residents in the draw, and if so, how much? |
| • The northern resident draw is criticized as unfair by southern Ontario hunters, and is no longer functional in some areas with low tag numbers. | 3. An alternative draw approach could allow enough time for hunters to apply for surplus tags and for those tags to be distributed through a random draw, rather than first-come, first-served. | • Short timelines will continue to restrict options available for distributing surplus tags, but simplifying other aspects of the draw can increase the time available and allow for consideration of additional options to make the surplus allocation fairer/less frustrating. |
| • Hunters continue to express frustration with the surplus tag distribution approach. |                                                                                             |                                                                                                                                                  |
Alternative Allocation Approaches - Descriptions

Point-based stand in line approach:
• In this approach tags are distributed to hunters based on the number of consecutive years the hunter has gone without receiving a tag. A hunter receives one point for each year they apply and are unsuccessful.
• Tags are distributed to hunters who have the most points for each tag type.
• Once a hunter receives an adult tag they lose all their points and must start over accruing points (i.e. they go to the back of the line).
• This approach can be readily combined with a group application approach to allow pooling of points.

Success-weighted random draw:
• An approach for distributing tags based on the number of consecutive years a hunter has gone without receiving a tag.
• A hunter gets one additional chance in the random draw for each year they are unsuccessful.
• Hunters that have gone the longest without receiving a tag have the best odds of drawing a tag, but even hunters who received a tag last year or who have never applied previously have a very small chance of success.
• This approach can be readily combined with a group application approach to allow pooling of chances.

Pool-based random draw:
• A hunter accumulates chances similar to a success weighted draw but every few years of applying unsuccessfully the hunter moves into a higher pool where their chances in the random draw are multiplied by the number of years unsuccessful.
• With a calf tag quota and draw, hunters who apply for and receive a calf tag could be allowed to keep some of the chances they had accumulated and remain in the appropriate pool.
• This approach is more difficult to combine with a group application to allow pooling of chances.
### Alternative Allocation Approaches - Comparison

<table>
<thead>
<tr>
<th>Point-based allocation</th>
<th>Success-weighted draw</th>
<th>Pool-based random draw</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hunters are never guaranteed a tag but this allocation approach provides the greatest certainty to a hunter when they are likely to receive a tag.</td>
<td>• This approach may be more appealing to new moose hunters and hunters who recently held a tag because they still have a chance (with low odds) in a random draw.</td>
<td>• Provides some of the benefits of each of the two other alternatives.</td>
</tr>
<tr>
<td>• The relatively predictability of this approach allows hunters in some circumstances to strategize how (WMU, tag type) they will apply for years in advance if desired.</td>
<td>• Conversely, unlucky hunters who have gone many years without a tag could by chance continue to go without a tag.</td>
<td>o Over time it greatly improves the chances a long-time unsuccessful applicant will receive a tag.</td>
</tr>
<tr>
<td>• Has the potential to strongly favour groups if pooling of points is allowed. Could be addressed by penalizing all group members some points.</td>
<td>• Has the potential to strongly favour groups if pooling of chances is allowed. Could be addressed by penalizing all group members some chances.</td>
<td>o New applicants and hunters who were recently successful in the draw still have a very low chance at draw success.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Does not provide the relatively certainty provided by the point-based allocation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improves the odds of draw success for long-time unsuccessful applicants compared to the success-weighted approach.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• More difficult to combine with a group approach due to complexity and potential to strongly favour groups.</td>
</tr>
</tbody>
</table>
Estimates are based on actual individual draw histories to 2018 and one point for each consecutive year a hunter has applied and been unsuccessful. WMUs shaded orange or red would require an individual to have many points to receive an adult gun tag of their choice in 2018. Fewer points are required for bow tags.
Success-Weighted Draw Example

Estimates are the percentage of total chances in the draw an individual applicant for a bull gun tag would have had in 2018. A hunter’s odds in the draw improve with time as they accumulate more chances but in WMUs shaded red or orange the chance of success remains quite low even after many years of being unsuccessful.
Estimates are the percentage of total chances in the draw an individual applicant for a bull gun tag would have had in 2018. Chances per year increases by 3 every 5 years of applying unsuccessfully. A hunter’s odds in the draw improve over time as they accumulate chances more rapidly in higher pools, but in WMUs shaded red or orange the chance of success remains quite low even after many years of being unsuccessful.
## Licence / Tag Prices

<table>
<thead>
<tr>
<th>Concern</th>
<th>Options to Address Concern</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Some hunters have expressed concern that moose tags are not</td>
<td>1. Tag prices could be increased equally to maintain revenue to support moose management.</td>
<td>• An application fee approach would require MNRF to consider changes in prices to maintain funding</td>
</tr>
<tr>
<td>appropriately priced given the demand for this highly valued resource.</td>
<td></td>
<td>for wildlife management.</td>
</tr>
<tr>
<td>• Many hunters have advocated for an application fee approach for</td>
<td>2. Tag prices could be increased with tags in highest demand (i.e. bulls) increased most and</td>
<td>• The range of changes that could be considered (e.g. application fee, licence without a tag,</td>
</tr>
<tr>
<td>moose, similar to the elk system in Ontario. Moving to an application</td>
<td>tags in least demand (i.e. calf) increased the least.</td>
<td>changes in the draw approach) make it difficult to predict the actual revenue implications for any</td>
</tr>
<tr>
<td>fee without other fee changes has significant implications for revenue</td>
<td></td>
<td>one change or a combination.</td>
</tr>
<tr>
<td>required to support moose management.</td>
<td></td>
<td>Therefore, it is difficult to predict the increase in tag price required to maintain the current</td>
</tr>
<tr>
<td>• The range of changes that could be considered (e.g. application fee,</td>
<td></td>
<td>level of revenue (likely from $50-$250).</td>
</tr>
<tr>
<td>licence without a tag, changes in the draw approach) make it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficult to predict the actual revenue implications for any one</td>
<td></td>
<td></td>
</tr>
<tr>
<td>change or a combination.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Tag Transfers, Surplus Allocation

<table>
<thead>
<tr>
<th>Concern</th>
<th>Options to Address Concern</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Some hunters complain that tag transfers are unfair as they promote groups padding their applicant numbers to boost their chances.</td>
<td>1. Tag transfers could be eliminated and any tag that cannot be used could go back into the surplus allocation process.</td>
<td>• Concerns about tag transfers have declined with restrictions implemented in 2011 requiring a hunter who has transferred a tag to accept a tag before they can transfer again.</td>
</tr>
<tr>
<td>• If Ontario moves to allow hunters to enter the draw with only an application fee, further restrictions on tag transfers may be necessary to ensure the allocation system is fair.</td>
<td>2. Potential changes to the draw, including closing the application period earlier could allow hunters to apply for surplus tags and MNRF to conduct a second random draw for surplus opportunities.</td>
<td>• Surplus tag distribution could be a random draw or based on other draw models (e.g. point-based, success-weighted). If based on accumulated hunter preference, should hunters be penalized (i.e. lose points or chances) for receiving a tag in the surplus allocation.</td>
</tr>
<tr>
<td>• Hunters continue to express frustration about surplus tags and the first-come, first-served surplus tag allocation process.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Making the Draw Simpler and Fairer

Summary

• The current moose tag allocation system is designed to work best when tags are numerous. Tag reductions have resulted in hunters increasingly being treated as individuals in the draw, whether they applied as part of a group or not.

• Existing moose draw technologies are nearing the end of functional life with need to build new system in the near future no matter the outcome of this review.

• The selective harvest system, draw process and licence/tag price are intricately linked.

• Previous discussions about potential changes to the moose draw have not been able to reach consensus but there are a range of options available to address hunter concerns.

• Making the draw simpler provides some benefits to hunters while improving system cost and administration.

• Making the draw fairer may be difficult unless defined as something other than getting preferred tags more frequently.